

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gilbert Wolrich et al.                      Art Unit : 2183  
Serial No. : 10/069,352                                      Examiner : David J. Huisman  
Filed : August 7, 2002                                      Conf. No. : 7931

Title : FAST WRITE INSTRUCTION FOR MICRO ENGINE USED IN  
MULTITHREADED PARALLEL PROCESSOR ARCHITECTURE

**MAIL STOP RCE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Applicant requests consideration of the references listed on the attached PTO-1449 form.  
Under 37 CFR § 1.98 (a)(2)(ii), only copies of foreign patent documents and non-patent literature are enclosed. Copies of the listed U.S. patents can be provided upon request.

This filing is being made with the filing of a Request for Continued Examination.

No fee is required. Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date:

Feb. 22, 2007



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|--|--|--|--------------------------------------|
| Substitute Form PTO-1449<br>(Modified)<br><br><b>Information Disclosure Statement<br/>by Applicant</b><br>(Use several sheets if necessary)<br><br>(37 CFR §1.98(b)) | U.S. Department of Commerce<br>Patent and Trademark Office | Attorney's Docket No.<br><b>10559-308US1</b> | Application No.<br><b>10/069,352</b> |
|  | Applicant<br><b>Gilbert Wolrich et al.</b>                 |  |                                      |
|  | Filing Date<br><b>August 7, 2002</b>                       | Group Art Unit<br><b>2183</b>                |                                      |

| U.S. Patent Documents |           |                 |                  |                   |       |          |                            |
|-----------------------|-----------|-----------------|------------------|-------------------|-------|----------|----------------------------|
| Examiner Initial      | Desig. ID | Document Number | Publication Date | Patentee          | Class | Subclass | Filing Date If Appropriate |
|                       | AA        | 2002/0038403    | 03/2002          | Wolrich et al.    |       |          |                            |
|                       | AB        | 3,577,189       | 05/1971          | Cocke et al.      |       |          |                            |
|                       | AC        | 3,881,173       | 04/1975          | Larsen et al.     |       |          |                            |
|                       | AD        | 4,454,595       | 06/1984          | Cage              |       |          |                            |
|                       | AE        | 4,471,426       | 09/1984          | McDonough         |       |          |                            |
|                       | AF        | 4,477,872       | 10/1984          | Losq et al.       |       |          |                            |
|                       | AG        | 4,569,016       | 02/1986          | Hao et al.        |       |          |                            |
|                       | AH        | 4,742,451       | 05/1988          | Bruckert et al.   |       |          |                            |
|                       | AI        | 4,755,966       | 07/1988          | Lee et al.        |       |          |                            |
|                       | AJ        | 4,808,988       | 02/1989          | Burke et al.      |       |          |                            |
|                       | AK        | 4,816,913       | 03/1989          | Harney et al.     |       |          |                            |
|                       | AL        | 4,847,755       | 07/1989          | Morrison et al.   |       |          |                            |
|                       | AM        | 4,868,735       | 09/1989          | Moller et al.     |       |          |                            |
|                       | AN        | 5,045,995       | 09/1991          | Levinthal et al.  |       |          |                            |
|                       | AO        | 5,056,015       | 10/1991          | Baldwin et al.    |       |          |                            |
|                       | AP        | 5,165,025       | 11/1992          | Lass              |       |          |                            |
|                       | AQ        | 5,170,484       | 12/1992          | Grondalski        |       |          |                            |
|                       | AR        | 5,187,800       | 02/1993          | Sutherland        |       |          |                            |
|                       | AS        | 5,189,636       | 02/1993          | Patti et al.      |       |          |                            |
|                       | AT        | 5,202,972       | 04/1993          | Gusefski et al.   |       |          |                            |
|                       | AU        | 5,220,669       | 06/1993          | Baum et al.       |       |          |                            |
|                       | AV        | 5,247,671       | 09/1993          | Adkins et al.     |       |          |                            |
|                       | AW        | 5,274,770       | 12/1993          | Khim Yeoh et al.  |       |          |                            |
|                       | AX        | 5,394,530       | 02/1995          | Kitta             |       |          |                            |
|                       | AY        | 5,428,779       | 06/1995          | Allegrucci et al. |       |          |                            |
|                       | AZ        | 5,463,746       | 10/1995          | Brodnax et al.    |       |          |                            |
|                       | BA        | 5,509,130       | 04/1996          | Trauben et al.    |       |          |                            |

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| Examiner Signature   | Date Considered |
| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |                 |

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|-----------------------|-----------|-----------------|------------------|-------------------|-------|----------|----------------------------|
| Examiner Initial      | Desig. ID | Document Number | Publication Date | Patentee          | Class | Subclass | Filing Date If Appropriate |
|                       | BB        | 5,541,920       | 07/1996          | Angle et al.      |       |          |                            |
|                       | BC        | 5,544,337       | 08/1996          | Beard et al.      |       |          |                            |
|                       | BD        | 5,572,690       | 11/1996          | Molnar et al.     |       |          |                            |
|                       | BE        | 5,600,848       | 02/1997          | Sproull et al.    |       |          |                            |
|                       | BF        | 5,610,864       | 03/1997          | Manning           |       |          |                            |
|                       | BG        | 5,640,538       | 06/1997          | Dyer et al.       |       |          |                            |
|                       | BH        | 5,669,012       | 09/1997          | Shimizu et al.    |       |          |                            |
|                       | BI        | 5,680,564       | 10/1997          | Divivier et al.   |       |          |                            |
|                       | BJ        | 5,701,435       | 12/1997          | Chi               |       |          |                            |
|                       | BK        | 5,724,563       | 03/1998          | Hasegawa          |       |          |                            |
|                       | BL        | 5,748,950       | 05/1998          | White et al.      |       |          |                            |
|                       | BM        | 5,802,373       | 09/1998          | Yates et al.      |       |          |                            |
|                       | BN        | 5,812,811       | 09/1998          | Dubey et al.      |       |          |                            |
|                       | BO        | 5,815,698       | 09/1998          | Holmann et al.    |       |          |                            |
|                       | BP        | 5,815,714       | 09/1998          | Shridhar et al.   |       |          |                            |
|                       | BQ        | 5,819,080       | 10/1998          | Dutton et al.     |       |          |                            |
|                       | BR        | 5,832,258       | 11/1998          | Kiuchi et al.     |       |          |                            |
|                       | BS        | 5,838,975       | 11/1998          | Abramson et al.   |       |          |                            |
|                       | BT        | 5,848,276       | 12/1998          | King et al.       |       |          |                            |
|                       | BU        | 5,857,104       | 01/1999          | Natarjan et al.   |       |          |                            |
|                       | BV        | 5,870,597       | 02/1999          | Panwar et al.     |       |          |                            |
|                       | BW        | 5,872,963       | 02/1999          | Bitar et al.      |       |          |                            |
|                       | BX        | 5,875,470       | 02/1999          | Dreibelbis et al. |       |          |                            |
|                       | BY        | 5,898,866       | 04/1999          | Atkins et al.     |       |          |                            |
|                       | BZ        | 5,923,872       | 07/1999          | Chrysos et al.    |       |          |                            |
|                       | CA        | 5,926,646       | 07/1999          | Pickett et al.    |       |          |                            |
|                       | CB        | 5,928,358       | 07/1999          | Takayama et al.   |       |          |                            |

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| (37 CFR §1.98(b))   |  |                                       |                               |

| U.S. Patent Documents |           |                 |                  |                    |       |          |                            |
|-----------------------|-----------|-----------------|------------------|--------------------|-------|----------|----------------------------|
| Examiner Initial      | Desig. ID | Document Number | Publication Date | Patentee           | Class | Subclass | Filing Date If Appropriate |
|                       | CC        | 5,937,177       | 08/1999          | Molnar et al.      |       |          |                            |
|                       | CD        | 5,943,491       | 08/1999          | Sutherland et al.  |       |          |                            |
|                       | CE        | 5,944,816       | 08/1999          | Dutton et al.      |       |          |                            |
|                       | CF        | 5,946,222       | 08/1999          | Redford            |       |          |                            |
|                       | CG        | 5,956,514       | 09/1999          | Wen et al.         |       |          |                            |
|                       | CH        | 5,993,627       | 11/1999          | Anderson et al.    |       |          |                            |
|                       | CI        | 6,005,575       | 12/1999          | Colleran et al.    |       |          |                            |
|                       | CJ        | 6,061,710       | 05/2000          | Eickemeyer et al.  |       |          |                            |
|                       | CK        | 6,061,711       | 05/2000          | Song et al.        |       |          |                            |
|                       | CL        | 6,101,599       | 08/2000          | Wright et al.      |       |          |                            |
|                       | CM        | 6,115,777       | 09/2000          | Zahir et al.       |       |          |                            |
|                       | CN        | 6,139,199       | 10/2000          | Rodriguez          |       |          |                            |
|                       | CO        | 6,141,348       | 10/2000          | Muntz              |       |          |                            |
|                       | CP        | 6,157,988       | 12/2000          | Dowling            |       |          |                            |
|                       | CQ        | 6,195,739       | 02/2001          | Wright et al.      |       |          |                            |
|                       | CR        | 6,205,468       | 03/2001          | Diepstraten et al. |       |          |                            |
|                       | CS        | 6,223,208       | 04/2001          | Kiefer et al.      |       |          |                            |
|                       | CT        | 6,223,277       | 04/2001          | Karguth            |       |          |                            |
|                       | CU        | 6,230,119       | 05/2001          | Mitchell           |       |          |                            |
|                       | CV        | 6,230,230       | 05/2001          | Joy et al.         |       |          |                            |
|                       | CW        | 6,230,261       | 05/2001          | Henry et al.       |       |          |                            |
|                       | CX        | 6,259,699       | 07/2001          | Opalka et al.      |       |          |                            |
|                       | CY        | 6,269,391       | 07/2001          | Gillespie          |       |          |                            |
|                       | CZ        | 6,275,508       | 08/2001          | Aggarwal et al.    |       |          |                            |
|                       | DA        | 6,314,510       | 11/2001          | Saulsbury et al.   |       |          |                            |
|                       | DB        | 6,338,133       | 01/2002          | Schroter           |       |          |                            |
|                       | DC        | 6,378,124       | 04/2002          | Bates et al.       |       |          |                            |

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| Examiner Initial      | Desig. ID | Document Number | Publication Date | Patentee         | Class | Subclass | Filing Date If Appropriate |
|                       | DD        | 6,378,125       | 04/2002          | Bates et al.     |       |          |                            |
|                       | DE        | 6,385,720       | 05/2002          | Tanaka et al.    |       |          |                            |
|                       | DF        | 6,401,155       | 06/2002          | Saville et al.   |       |          |                            |
|                       | DG        | 6,408,325       | 06/2002          | Shaylor          |       |          |                            |
|                       | DH        | 6,496,847       | 12/2002          | Bugnion et al.   |       |          |                            |
|                       | DI        | 6,505,229       | 01/2003          | Turner et al.    |       |          |                            |
|                       | DJ        | 6,523,108       | 02/2003          | James et al.     |       |          |                            |
|                       | DK        | 6,543,049       | 04/2003          | Bates et al.     |       |          |                            |
|                       | DL        | 6,560,629       | 05/2003          | Harris           |       |          |                            |
|                       | DM        | 6,560,671       | 05/2003          | Samra et al.     |       |          |                            |
|                       | DN        | 6,564,316       | 05/2003          | Perets et al.    |       |          |                            |
|                       | DO        | 6,574,702       | 06/2003          | Khanna et al.    |       |          |                            |
|                       | DP        | 6,862,676       | 03/2005          | Knapp et al.     |       |          |                            |
|                       | DQ        | 6,976,095       | 12/2005          | Wolrich et al.   |       |          |                            |
|                       | DR        | 6,983,350       | 01/2006          | Adiletta et al.  |       |          |                            |
|                       | DS        | 7,020,871       | 03/2006          | Bernstein et al. |       |          |                            |

| Foreign Patent Documents or Published Foreign Patent Applications |           |                 |                  |                          |       |          |             |    |
|---|-----------|-----------------|------------------|--------------------------|-------|----------|-------------|----|
| Examiner Initial  | Desig. ID | Document Number | Publication Date | Country or Patent Office | Class | Subclass | Translation |    |
|   |           |                 |                  |                          |       |          | Yes         | No |
|   | DT        | 0 130 381       | 01/1985          | Europe                   |       |          |             |    |
|   | DU        | 0 463 855       | 01/1992          | Europe                   |       |          |             |    |
|   | DV        | 0 476 628       | 03/1992          | Europe                   |       |          |             |    |
|   | DW        | 0 696 772       | 02/1996          | Europe                   |       |          |             |    |
|   | DX        | WO03/019399     | 03/2003          | WIPO                     |       |          |             |    |
|   | DY        | WO03/085517     | 10/2003          | WIPO                     |       |          |             |    |

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| (37 CFR §1.98(b))   |  |                                       |                               |

| Other Documents (include Author, Title, Date, and Place of Publication) |           |  |
|---|-----------|--|
| Examiner Initial  | Desig. ID | Document   |
|   | DZ        | "HART, Field Communications Protocol, Application Guide", Hart Communication Foundation, pp. 1-74, (1999).   |
|   | EA        | Bowden, Romilly, "What is HART?" Romilly's HART® and Fieldbus Web Site, 3 pages, (1997).<br><URL: <a href="http://www.romilly.co.uk/whathart.htm">http://www.romilly.co.uk/whathart.htm</a> >  |
|   | EB        | Cheng, et al., "The Compiler for Supporting Multithreading in Cyclic Register Windows", <i>IEEE</i> , pp. 57-62, (1996).   |
|   | EC        | Hennessy et al., <i>Computer Organization and Design: The Hardware/Software Interface</i> , Morgan Kaufman Publishers, pp. 116-119, 181-182, 225-227, 447-449, 466-470, 476-482, 510-519, 712, (1998).   |
|   | ED        | Heuring et al., <i>Computer Systems Design and Architecture</i> , Reading, MA, Addison Wesley Longman, Inc., pp. 174-176 and 200, (1997).  |
|   | EE        | Heuring et al., <i>Computer Systems Design and Architecture</i> , Reading, MA, Addison Wesley Longman, Inc., pp. 38-40, 143-171, and 285-288, (1997).  |
|   | EF        | Hidaka, Y., et al., "Multiple Threads in Cyclic Register Windows", <i>Computer Architecture News</i> , ACM, New York, NY, USA, 21(2):131-142, May 1993.  |
|   | EG        | Hirata, H., et al., "An Elementary Processor Architecture with Simultaneous Instruction Issuing from Multiple Threads", <i>Proc. 19th Annual International Symposium on Computer Architecture, ACM &amp; IEEE-CS</i> , 20(2):136-145, May 1992.                        |
|   | EH        | Jung, G., et al., "Flexible Register Window Structure for Multi-Tasking", <i>Proc. 24th Annual Hawaii International Conference on System Sciences</i> , vol. 1, pp. 110-116, (1991).   |
|   | EI        | Koch, G., et al., "Breakpoints and Breakpoint Detection in Source Level Emulation", <i>Proc. 19th International Symposium on System Synthesis (ISSS '96)</i> , <i>IEEE</i> , pp. 26-31 (1996).   |
|   | EJ        | Moors, et al., "Cascading Content-Addressable Memories", <i>IEEE Micro</i> , 12(3):56-66 (1992).   |
|   | EK        | Okamoto, K., et al., "Multithread Execution Mechanisms on RICA-1 for Massively Parallel Computation", <i>IEEE - Proc. Of PACT '96</i> , pp. 116-121 (1996).  |
|   | EL        | Patterson, et al., <i>Computer Architecture A Quantitative Approach</i> , 2nd Ed., Morgan Kaufmann Publishers, Inc., pp. 447-449, (1996).  |
|   | EM        | Paver, et al., "Register Locking in an Asynchronous Microprocessor", <i>IEEE</i> , pp. 351-355, (1992).  |
|   | EN        | Philips ED - Philips Components: "8051 Based 8 Bit Microcontrollers, Data Handbook Integrated Circuits, Book IC20", 8051 Based 8 Bit Microcontrollers, Eindhoven, Philips, NL, pp. 5-19 (1991).  |
|   | EO        | Probst et al., "Programming, Compiling and Executing Partially-Ordered Instruction Streams on Scalable Shared-Memory Multiprocessors", <i>Proceedings of the 27th Annual Hawaiian International Conference on System Sciences</i> , <i>IEEE</i> , pp. 584-593, (1994). |
|   | EP        | Quammen, D., et al., "Flexible Register Management for Sequential Programs", <i>IEEE Proc. of the Annual International Symposium on Computer Architecture</i> , Toronto, May 27-30, 1991, vol. SYMP. 18, pp. 320-329.  |
|   | EQ        | Ramsey, N., "Correctness of Trap-Based Breakpoint Implementations", <i>Proc. of the 21st ACM Symposium on the Principles of Programming Languages</i> , pp. 15-24 (1994).  |
|   | ER        | Steven, G.B., et al., "ALU design and processor branch architecture", <i>Microprocessing and Microprogramming</i> , 36(5):259-278, October 1993.   |

|  |                 |
|--|-----------------|
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| (37 CFR §1.98(b))   |  |                                       |                               |

| <b>Other Documents (include Author, Title, Date, and Place of Publication)</b> |              |  |
|--|--------------|--|
| Examiner<br>Initial  | Desig.<br>ID | Document   |
|  | ES           | Young, H.C., "Code Scheduling Methods for Some Architectural Features in Pipe", <i>Microprocessing and Microprogramming</i> , Elsevier Science Publishers, Amsterdam, NL, 22(1):39-63, January 1988. |
|  | ET           | Young, H.C., "On Instruction and Data Prefetch Mechanisms", <i>International Symposium on VLSI Technology, Systems and Applications, Proc. of Technical Papers</i> , pp. 239-246, (1995).            |

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